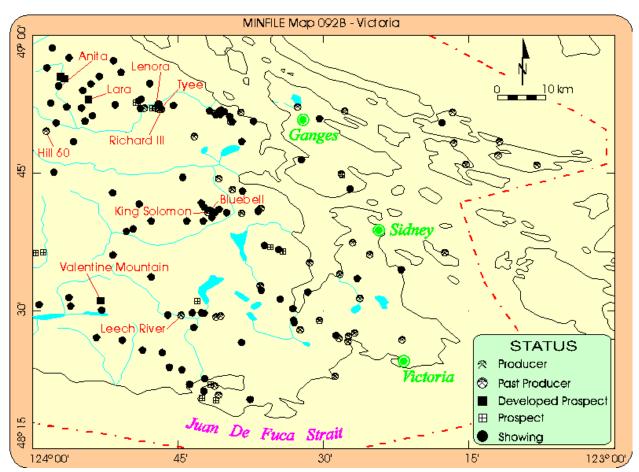




MINFILE NTS 092B - VICTORIA

Original release date: January 1991 Researched and compiled by: G.J. Payie

The Victoria map area, with 149 known mineral occurrences, lies within the Insular Belt, comprising the Wrangellia terrane. The geology consists of rocks belonging to the Paleozoic Sicker and Buttle Lake groups (found within the Cowichan uplift), the Mesozoic Vancouver, Bonanza and Nanaimo groups, the Jurassic to Cretaceous Leech River Complex, the Colquitz and Wark Gneisses of Paleozoic and/or Mesozoic age and the Tertiary Metchosin Volcanics. The strata are intruded by the Early to Middle Jurassic Island Plutonic Suite and the Tertiary Sooke Gabbro. In 1986, a 4-year program of regional mapping was initiated under the Canada-British Columbia Mineral Development Agreement, focusing on the Paleozoic Sicker Group. This work, by N. Massey of the Geological Survey Branch, has led to major stratigraphic revisions and associated nomenclature changes.



The Sicker strata are an important exploration target for volcanogenic massive sulphides. They contain past producers such as the **Lenora** (092B 001), **Tyee** (092B 002) and **Richard III** (092B 003) (Mount Sicker deposits), as well as several developed prospects, notably the **Lara** (092B 129) and the **Anita** (092B 037) deposits. The Lara has published reserves of 529,000 tonnes, grading 1.11 per cent copper, 1.22 per cent lead, 5.87 per cent zinc, 4.73 grams per tonne gold and 100.1 grams per tonne silver.

Deposits underlain by metasediments of the Leech River Complex include the **Valentine Mountain** prospect (092B 108) where a gold-bearing quartz-vein system hosts reserves (in 1992) of 30,660 tonnes, grading 14.7 grams per tonne gold. During the summer of 1996 a small gravity gold mining plant was erected on the property to test the feasibility of a larger operation. The small mill operated from September 18 to November 22, processing a total of 68 tonnes of ore. The grade was calculated at 9.9 grams per tonne gold, over a 1-metre width. Placer gold, derived from the metasediments, has been mined from the **Leech River** (092B 078) itself, where a gold rush in the 1860's engaged over 3000 men. Talc occurrences hosted in shear zones within the Leech River rocks were also developed.

Several hundred tonnes of ore were mined from the **King Solomon** (092B 015) and **Bluebell** (092B 080) skarn deposits which are associated with limestone of the Mount Mark Formation (Buttle Lake Group). A number of skarns are also associated with Quatsino Formation limestone (Vancouver Group).

Industrial minerals extensively mined throughout the map area include limestone, granitic rock, sandstone, shale, clay and rhodonite. Manganese was produced at the **Hill 60** (092B 027) deposit; rhodonite is still produced there.

A province-wide mineral potential study was launched in 1992 with Vancouver Island as the initial study area. Data resulting from this study are available on the Ministry web site.

SELECTED REGIONAL REFERENCES (NTS 092B - VICTORIA)

- Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, *Carleton University*.
- Carson, D.J.T. (1973): The Plutonic Rocks of Vancouver Island, British Columbia; Geological Survey of Canada, Paper 72-44.
- Clapp, C.H. (1912): Southern Vancouver Island; Geological Survey of Canada, Memoir 13 (includes Map 17A).
- Clapp, C.H. (1913): Geology of the Victoria and Saanich Map-areas, Vancouver Island; *Geological Survey of Canada*, Memoir 36 (includes Maps 70A, 71A, 72A and 73A).
- Clapp, C.H. (1917): Sooke and Duncan Map-areas, Vancouver Island; *Geological Survey of Canada*, Memoir 96 (includes Maps 41A, 42A, 43A, 44A, 157A and 167A).
- Eastwood, G.E.P. (1978): Geology of the Mount Richards Area, Vancouver Island; B.C. Ministry of Energy, Mines and Petroleum Resources, Preliminary Map 40.
- Eastwood, G.E.P. (1979): Sicker Project; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1978.
- Eastwood, G.E.P. (1980): Sicker Project Mount Richards Area; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1979.
- Eastwood, G.E.P. (1982): Geology of the Whitehouse Creek Area; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1981.
- Eastwood, G.E.P. (1983): Leach River Area, Vancouver Island; B.C. Ministry of Energy Mines and Petroleum Resources, Geological Fieldwork 1982.
- Fyles, J.T. (1955): Geology of the Cowichan Lake Area; B.C. Ministry of Energy, Mines and Petroleum Resources, Bulletin 37.
- Gravel, J.L., Jackaman, W., Matysek, P.F. (1990): 1989 Regional Geochemical Survey, Southern Vancouver Island and Lower Mainland (92B, 92C, 92F & 92G); B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1989.
- Hudson, R. (1997): A Field Guide to Gold, Gemstone and Mineral Sites of British Columbia, Vol. 1: Vancouver Island; *Orca Book Publishers*, pp. 58-95, 111-112.
- Massey, N.W.D. and Friday, S.J. (1987): Geology of the Cowichan Lake Area, Vancouver Island; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geological Fieldwork 1986.
- Massey, N.W.D., Friday, S.J., Tercier, P.E., Rublee, V.J. (1987): Geology of the Cowichan Lake Area, Vancouver Island; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Open File Map 1987-2, 1:20,000.

- Massey, N.W.D. and Friday, S.J. (1988): Geology of the Port Alberni Nanaimo Lakes Area, Vancouver Island; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1988.
- Massey, N.W.D., Friday, S.J., Tercier, P.E., Potter, T.E. (1987): Geology of the Duncan and Chemainus River Area, Vancouver Island; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Open File Map 1988-8, 1:20,000.
- Massey, N.W.D. and Friday, S.J. (1988): Geology of the Chemainus River Duncan Area, Vancouver Island; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1987.
- Massey, N.W.D., Friday, S.J., Riddell, J.M., and Dumais, S.E. (1991): Geology of the Port Alberni Nanaimo Lakes Area; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geoscience Map 1991-1, 1:50,000 (with Paper 1992-2).
- Massey, N.W.D., Friday, S.J., Tercier, P.E., Rublee, V.J. and Potter, T.E. (1991): Geology of the Cowichan Lake Area; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geoscience Map 1991-2, 1:50,000 (with Paper 1992-3).
- Massey, N.W.D., Friday, S.J., Tercier, P.E., Potter, T.E. (1991): Geology of the Duncan Area; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geoscience Map 1991-3, 1:50,000 (with Paper 1992-4).
- Massey, N.W.D. (1992): Geology and Mineral Resources of the Alberni Nanaimo Lakes Sheet; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Paper 1992-2.
- Massey, N.W.D. (1992): Geology and Mineral Resources of the Cowichan Lake Sheet; B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1992-3.
- Massey, N.W.D. (1992): Geology and Mineral Resources of the Duncan Sheet; B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1992-4.
- Massey, N.W.D. (1992): Mineral Potential of the Duncan Area; B.C. Ministry of Energy, Mines and Petroleum Resources, Mineral Potential Map 1992-3.
- Massey, N.W.D. (1994): The Vancouver Island Mineral Potential Project (92B, C,F,G,K,L and 102I; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1994.
- Massey, N.W.D. (1995): Geological Compilation, Vancouver Island, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-6, 1: 250,000.
- Muller, J.E. (1977): Geology of Vancouver Island; Geological Survey of Canada, Open File 463, 1: 250,000.
- Muller, J.E., (1979,1980): Victoria: Geological Survey of Canada, Map 1553A, 1: 100,000.
- Muller, J.E. (1980): The Paleozoic Sicker Group of Vancouver Island, British Columbia; *Geological Survey of Canada*, Paper 79-30.
- Roddick, J.A., Muller, J.E. and Okulitch, A.V., Compilers (1976): Fraser River; *Geological Survey of Canada*, Map 1386A, 1: 1,000,000.
- Rusmore, M.E. (1982): Structure and Petrology of Pre-Tertiary Rocks Near Port Renfrew, Vancouver Island, unpublished M.Sc. Thesis, *University of Washington*.
- Wingert, G.A. (1982): Structure and Metamorphism of the Valentine Mountain Area, unpublished B.Sc. Thesis, *University of British Columbia*.